

Abstract of the Disclosure

[0093] Energy conversion systems utilizing nanometer scale assemblies are provided that convert the kinetic energy (equivalently, the thermal energy) of working substance molecules into another form of energy that can be used to perform useful work at a macroscopic level. These systems may be used to, for example, produce useful quantities of electric or mechanical energy, heat or cool an external substance or propel an object in a controllable direction. In particular, the present invention includes nanometer scale impact masses that reduce the velocity of working substance molecules that collide with this impact mass by converting some of the kinetic energy of a colliding molecule into kinetic energy of the impact mass. Various devices including, piezoelectric, electromagnetic and electromotive force generators, are used to convert the kinetic energy of the impact mass into electromagnetic, electric or thermal energy. Systems in which the output energy of millions of these devices is efficiently summed together are also disclosed.